

CLAIMS

It is claimed:

- 5        1. A method of preventing undesired postimplantation tissue growth in a human or animal subject following endoprosthetic implantation, the method comprising the steps of:
  - (a) selecting a suitable endoprosthetic implant, wherein the implant comprises an implant structure formed of a substantially bioinert structural material, a galvanically releasable silver component, and at least one metal more noble than silver selected from the group consisting of gold, rhodium, and platinum, wherein the silver is deposited on at least a portion of the surface of the implant structure, and wherein the more noble metal is deposited on at least a portion of the surface of the implant structure; and
  - 15        (b) implanting the implant of step (a) into the subject under such conditions that a physiological electrolyte contacts the silver and the more noble metal.
- 20        2. The method of claim 1, wherein the silver component and more noble metal of step (a) are provided as an alloy.
- 25        3. The method of claim 2, wherein the concentration of silver in the alloy is effective to reduce tissue cell growth on the implant, relative to a comparable implant lacking the alloy.
4. The method of claim 2, wherein the molar ratio of silver to more noble metal in the alloy is at most about 1:1.
5. The method of claim 1, wherein the silver and the more noble metal are

deposited at separate sites on the implant.

6. The method of claim 1, wherein the more noble metal is deposited as a layer on at least a portion of the implant surface, and wherein the silver is zone deposited onto a portion of the more noble metal layer.

5 7. A method of rendering bioactively suppressant an endoprosthetic implant comprising an implant structure formed of a substantially bioinert structural material providing mechanical integrity to the implant, a galvanically releasable silver component, and a least one metal more noble than silver selected from the group consisting of gold, platinum, and rhodium, wherein the silver and the noble metal are deposited on at least a portion of the implant structure surface, 10 said method comprising:

(a) contacting the silver and noble metal with a physiological electrolyte.

8. The method of claim 7, wherein the silver and noble metal are provided as an alloy.

15 9. The method of claim 8, wherein the molar ratio of silver to more noble metal in the alloy is at most about 1:1.

10. The method of claim 7, wherein the silver and the noble metal are deposited at separate sites on the implant.

11. The method of claim 7, wherein the silver is deposited on a portion of 20 the deposited noble metal.

12. The method of claim 7, further comprising the step of:

(c) depositing a corrosion mask on a portion of the deposited silver.

13. The method of claim 7, further comprising the step of:

(c) depositing a polymer coating permeable to a physiologic electrolyte on at least a portion of the silver component.

14. A method of forming an endoprosthetic implant capable of being bioactively suppressant when contacted with a physiological electrolyte, the 5 method comprising the steps of:

(a) providing an implant structure formed of a substantially bioinert structural material; and

10 (b) depositing galvanically releasable silver and a metal more noble than silver on at least a portion of the surface of the implant structure of step (a), the noble metal selected from the group consisting of gold, platinum, and rhodium.

15. The method of claim 14, wherein the silver and noble metal are provided as an alloy.

16. The method of claim 14, wherein the molar ratio of silver to the more noble metal in the alloy is at most about 1:1.

15 17. The method of claim 14, wherein the silver and the more noble metal are deposited at separate sites on the implant.

18. The method of claim 14, wherein the more noble metal is deposited as a layer on at least a portion of the implant surface, and wherein the silver is zone deposited onto a portion of the more noble metal layer.

20 19. The method of claim 14, further comprising the step of:

(c) depositing a corrosion mask on a portion of the silver.

20. The method of claim 14, further comprising the step of:

(c) depositing a polymer coating permeable to a physiologic electrolyte on at least a portion of the silver.